LMVD POTAMOLOGY STUDY (T-1)



A Report Submitted to
The Department of the Army
St. Louis District, Corps of Engineers
for the Period of
1 April 1975 to 30 June 1976

by

Dr. Paul R. Munger

Dr. Jerome A. Westphal

Dr. Glendon T. Stevens

Dr. Clifford D. Muir

Dr. Samuel P. Clemence

Dr. Frank J. Kern

Dr. David J. Barr

Dr. Thomas R. Beveridge

Professor John B. Heagler, Jr.

Contract No. DACW 43-75-C-0105

30 June 1976

PREFACE

This study, "LMVD Potamology Study (T-1)" was conducted by an inter-disciplinary team of engineers and scientists for the U.S. Army Corps of Engineers under Contract No. DACW 43-75-C-0105, dated 21 March 1975. The study was undertaken by the team of specialists for the purpose of assimilating data to be used to obtain a better understanding of the mechanisms and relationships that result in large scale change in the regime of an alluvial river due to man-made modifications. This study was limited to the compilation and processing of data relevant to dikes and revetments, levees, geology, morphology and hydrology.

The study was coordinated under the leadership of Dr. Paul R. Munger, who served as Project Director and editor of the report. Dr. Glendon T. Stevens served as Project Co-Director. Various disciplinary areas of the report were prepared by the following persons:

Hydrology Hydraulics

Morphology Geology

Data Compilation and Processing

Dr. Glendon T. Stevens Dr. Clifford D. Muir

Dr. Jerome A. Westphal Professor John B. Heagler, Jr.

Dr. Samuel P. Clemence

Dr. David J. Barr

Dr. Thomas R. Beveridge

Dr. Frank J. Kern

Special acknowledgments are due the following persons for their assistance and cooperation during the tenure of this study: Mr. Norbert C. Long, who served as the Contracting Officer's Representative until March 31, 1976; Mr. Jack R. Niemi, the Authorized Representative of the Contracting Officer who served in that capacity from April 1, 1976 through

completion of the study; Mr. C.N. Strauser, Project Administrator; St. Louis District, Corps of Engineers personnel, Miss Jean Finn, Mr. Gary Schwartz, Mr. Michael Dace III and Mr. Gary Dyhouse; Memphis District personnel, Mr. David McNutt, Mr. Bobby Littlejohn; Vicksburg District personnel, Mr. Patrick Harris, Mr. Brian Winkley; LMVD Potamologist, Mr. James Tuttle; New Orleans District personnel, Mr. Billy Garrett, Mr. John Miller, Mrs. Pearl Burke; special consultants who assisted so effectively in locating the necessary data, Mr. Roger Lyon (Memphis), Mrs. Margaret Palmer and Mr. Austin Smith (Vicksburg), and Mr. Robert Turina (St. Louis); Mr. Melvin Jansen and Mr. Howard McCormick of the U.S.G.S. Water Resources Division (Rolla, Missouri); Mr. Robert G. Livingston, U.S. Army Engr. Topo. Labs (Retired), who assisted in obtaining aerial photography and in editing the report; and the many undergraduate and graduate students from the University of Missouri-Rolla, who assisted in the compilation and processing of data, along with students from Memphis State University and Tulane University. In particular, for their contributions in overseeing the work of a number of undergraduate students, the following graduate students deserve being cited: Mr. Leonard Woolsey, Mr. Paul H. Leaver, Mr. Jerry Maurseth and Mr. William Wilkerson, all of the University of Missouri-Rolla.

Without the cooperation and assistance of all of the above named persons, this study would not have been possible. In addition, the excellent cooperation and assistance provided by a number of federal, state and local agencies in obtaining information essential to this study is deeply appreciated.